IN THE CLAIMS:

1. (Original) A system for extending the capacity to accommodate low-speed subscribers in an asynchronous transfer mode (ATM) switching system, comprising:

a subscriber board for interfacing with a switch link via a system backboard, for receiving a cell transmitted from the switch link, and for multiplexing/demultiplexing the received cell via a UTOPIA interface after performing an ATM layer operation;

a physical layer board for exchanging data with the lower-speed subscriber and for serializing the cell transmitted from the subscriber board into a clock and data bits prior to the transmission to the low-speed subscriber;

a multiplexing/demultiplexing board for recovering the clock and data bits received from the physical layer board via a cable, for converting the received clock and data bits to parallel data in a word unit, and for multiplexing the read cells, and for transmitting the multiplexed cells to the physical layer board via a link processor; and

a plurality of extension boards for exchanging the cell with the multiplexing/demultiplexing board via a low-speed bus, for performing physical layer operation on the cell received thereon, and for transmitting the received cell to the corresponding low-speed subscriber via the physical layer board.

2. (Original) The system as claimed in Claim 1, wherein the subscriber board and the physical layer board are mounted on a first shelf in the ATM switching system, and the multiplexing/demultiplexing board and the plurality of the extension boards are mounted on a second shelf.

3. (Original) The system as claimed in Claim 1, wherein the cell being exchanged through the UTOPIA interface comprises a PBA ID (Physical Block Address Identification) for identifying one of the extension boards, a link number for identifying the low-speed subscriber link, and a UDF (User Define Function) data.

4. (Original) The system as claimed in Claim 2, wherein the multiplexing/demultiplexing board comprises a control module for controlling the physical layer board and the extension boards via inter-processor communication (IPC) protocol.

5. (Original) The system as claimed in Claim 1, wherein the multiplexing/demultiplexing board reads the cell received from the plurality of the extension boards via the low-speed bus on a round robin basis.

6. (Original) The system as claimed in Claim 4, wherein the controlling of the low-speed extension board and the low-speed extension physical layer board is performed through a control bus disposed in an extension backboard of the second shelf.

7. (Currently Amended) A system for accommodating additional subscribers in an asynchronous transfer mode (ATM) switching system, comprising:

a hybrid control means for transporting ATM traffic over a plurality of physical channels, said physical channels having different fixed bandwidth allocations;

a first bandwidth control structure for directing a first physical channel having a first fixed bandwidth allocation;

a second bandwidth control structure for directing a second physical channel having a second fixed bandwidth allocation to a plurality of extension boards,

wherein the first fixed bandwidth allocation is greater than the second fixed bandwidth allocation**; and**

wherein the first bandwidth control structure serializes a cell received from a subscriber into clock and data bits, and the second bandwidth control structure receives the serialized clock and data bits, makes a serial to parallel conversion into a word unit for data exchange.

8. (Original) The system as claimed in Claim 7, wherein the first bandwidth control structure comprises a subscriber board for interfacing with a switch link and for multiplexing/demultiplexing the cell received therein to one of the extension subscribers.

9. (Original) The system as claimed in Claim 7, wherein the second bandwidth control structure comprises a means for multiplexing/demultiplexing the data exchanged with the first bandwidth control structure.

10. (Original) The system as claimed in Claim 9, wherein the second bandwidth control structure further comprising a plurality of extension boards for exchanging the data with the multiplexing/demultiplexing means via a low-speed bus and for transmitting the data received therein to one of the subscribers.

11. (Original) The system as claimed in Claim 7, wherein the data being exchanged between the first and second bandwidth control structures include a PBA ID (Physical Block Address Identification) for identifying one of the extension boards, a link number for identifying the of the subscriber, and a UDF (User Define Function) data.